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ABSTRACT

Intended for teachers and administrators who work with Chapter 1, Education Consolidation and Improvement Act programs, this report describes elements identified by researchers as essential features of successful schooling. After discussing the impact of schools and teachers and the interrelatedness of their effectiveness, it presents 13 attributes consistently present in effective classrooms and schools. Organizational attributes are as follows: (1) positive school/classroom climate; (2) clear goals and objectives; (3) coordination with the regular school program/other special programs; (4) parent/community involvement; (5) professional development and training; (6) evaluation results used for project improvement; and (7) strong leadership. Instructional attributes are as follows: (1) appropriate instructional materials, methods, and approaches; (2) maximum use of academic learning time; (3) high expectations for student learning and behavior; (4) closely monitored student progress; (5) regular feedback and reinforcement; and (6) excellence recognized and rewarded. For each of these attributes, pertinent research is provided, as are examples of ways they are manifested in successful programs. Practitioners should expect program improvement to be time consuming and initially confusing, and to require administrative support. (LHW)

Effective Compensatory Education Sourcebook

Volume I:

A Review of Effective Educational Practices

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Volume I: A Review of Effective Educational Practices

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UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF THE ASSISTANT SECRETARY
FOR ELEMENTARY AND SECONDARY EDUCATION

On April 11, 1985, the 20th Anniversary of the Title I/Chapter 1 compensatory education program, Secretary Bennett announced the selection of 116 outstanding Chapter 1 projects. These projects were selected from a field of 334 nominees submitted as a part of the Secretary's initiative to improve education for the disadvantaged.

Exemplifying the 13 principal attributes of successful Chapter 1 programs identified in recent research, these 116 award winning projects, and 24 other Title 1 projects honored as Joint Dissemination Review Panel validated projects, comprise the framework of the Effective Compensatory Education Sourcebook. By combining research findings with how-to information from these outstanding Chapter 1 projects, the Sourcebook provides State and local educators with an information base for expanding effective programs and practices in educating disadvantaged children.

More than 200,000 Chapter 1 teachers and administrators form the intended audience for the Sourcebook. They are the professionals who each year direct their best efforts to the education of the almost five million underprivileged children across the Nation.

Much has been said and written in recent years about the quality of education America's youngsters are receiving today. From the 1983 landmark study, A Nation At Risk, to the 1985 report, Investing in Our Children, there have been a number of serious calls for reforming the system. The Department of Education and the Reagan Administration are committed to achieving such improvement through the creation and promotion of highly effective programs based upon current research and proven practices, the most recent instance being the widely acclaimed What Works: Research About Teaching and Learning.

This Sourcebook represents a major effort in that continuing commitment to excellence.

The 13 attributes of successful compensatory education were identified on the basis of a thorough review of school improvement and effectiveness research, and they form the core of the Sourcebook. Each of these attributes, when carefully and conscientiously implemented as they were in the outstanding projects described, can contribute to new successes.

The evidence is clear: implementing the research findings, exemplified by projects described in this Sourcebook will produce results. By applying these principles and following these examples, Chapter 1 schools and programs can expect to achieve improved performance and greater success. It is the hope of all who worked on this Sourcebook that excellence becomes a more viable aspiration and a more reachable goal for all who pursue it.

Best of luck in that pursuit!

Lawrence F. Davenport
Assistant Secretary

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America is entering its third decade of Title I/Chapter 1 compensatory education for disadvantaged children. During the first 20 years of this program, compensatory education has made it possible for the Nation's educationally deprived young people to get special assistance in reading, writing, and mathematics.

Since the program began in 1965, more than $40 billion have been invested in bringing quality education to underprivileged students.

In the process of helping disadvantaged children to overcome learning problems, the compensatory education program has also enabled schools to try innovative approaches which ultimately benefited non-disadvantaged children as well. Now, with the publication of this Effective Compensatory Education Sourcebook, once more the Chapter 1 program is breaking new ground, and pioneering new initiatives. Chapter 1 staff throughout the country have shown a lively commitment to identifying, sharing, and implementing the effective practices and principles of these highly successful projects.

In disseminating the Sourcebook, the Department of Education demonstrates its intention to work with State education agencies and with the regional Chapter 1 Technical Assistance Centers to get this information into the hands of local school districts as efficiently, as effectively, and as quickly as possible.

The 116 outstanding projects and the 24 Joint Dissemination Review Panel projects included here exemplify the 13 principal attributes of successful Chapter 1 programs that form the framework of the book.

Thus, this Sourcebook becomes a means to share success, recognize the pedagogical richness of the program, and advocate a standard of excellence that all Chapter 1 projects can seek to emulate. Together, we look forward to attaining these goals.

To everyone who labored to make it a reality, let me say your efforts are appreciated. You will have the thanks of the millions of youngsters who will benefit from this work in the future, and you have mine now.

Mary Jean LeTendre

Mary Jean LeTendre
Director
Compensatory Education Programs

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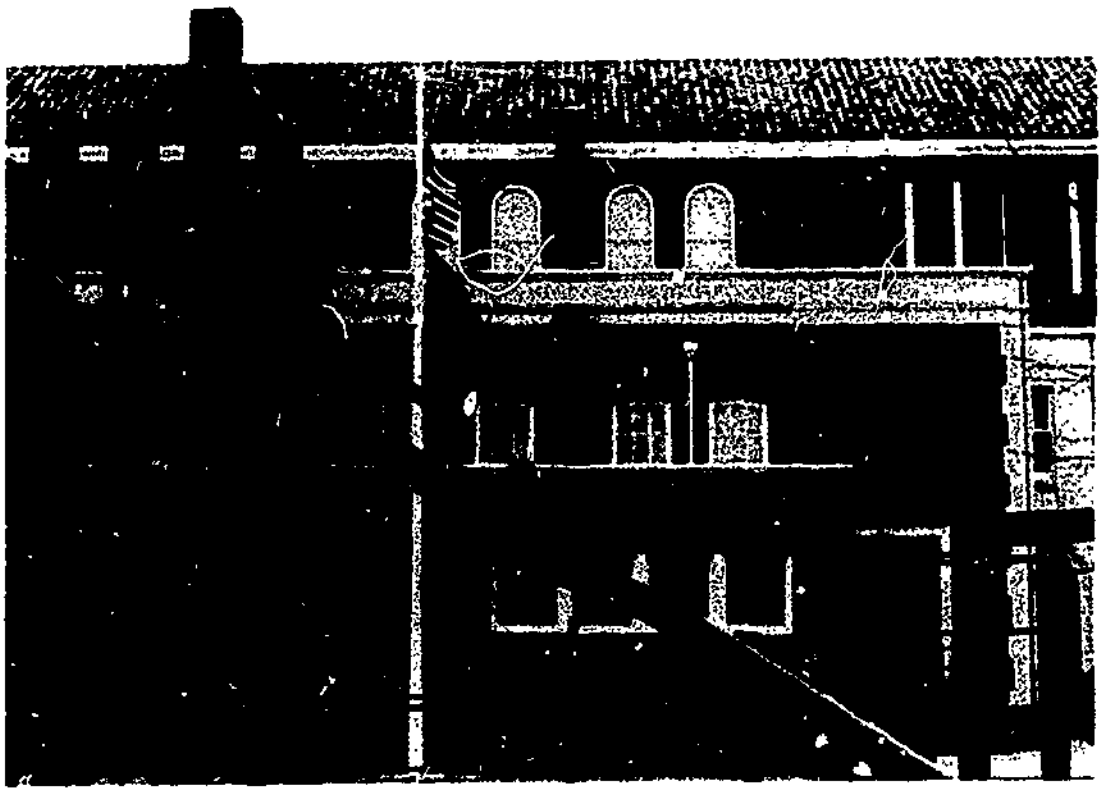
Introduction

Introduction

The *Effective Compensatory Education Sourcebook* series is intended primarily for teachers and administrators who work with Chapter 1, Education Consolidation and Improvement Act (ECIA), programs. *Volume I: A Review of Effective Educational Practices Sourcebook* describes those elements identified by researchers as essential features of successful schooling. *Volume II: Project Profiles* offers profiles of actual Chapter 1 programs which have been determined to be effective, as approved by the U.S. Department of Education's Joint Dissemination Review Panel, or recognized as unusually successful under the Secretary of Education's Initiative to Improve the Quality of Chapter 1 Projects (National Identification Program). In these profiles you will find ideas that have worked well and are supported by research, together with people you may contact for more information.

Volume I is organized around 13 attributes which researchers have consistently found present in effective classrooms and schools. Both teaching and administrative attributes are described, along with pertinent research supporting their effectiveness and examples of ways they are manifested in successful programs. Research notes at the end of the narrative provide support for the findings stated, along with additional information.

We urge you to use these documents as a resource for program improvement. You might, for example, draw upon the concepts found in Volume I as aids for planning and for inservice training. Volume II may prove useful as you examine your own program and seek to know more about the practices effectively used in Chapter 1 programs across the nation.



Schools Make a Difference

Schools Make a Difference

At about the time Title I of the Elementary and Secondary Education Act began, research suggested that a large-scale attempt at compensatory education was doomed to disappointment and failure.[1] The reigning beliefs, seemingly supported by research, were that:

- What children learn depends more on what they bring with them into the school than on what the schools can do to promote learning.

- The obstacles associated with having come from a low socioeconomic background are too potent to be overcome by the schools' attempts to compensate. This early research painted a bleak picture for those committed to improving educational opportunities for students in economically poor communities.

Roots of the effective schooling movement

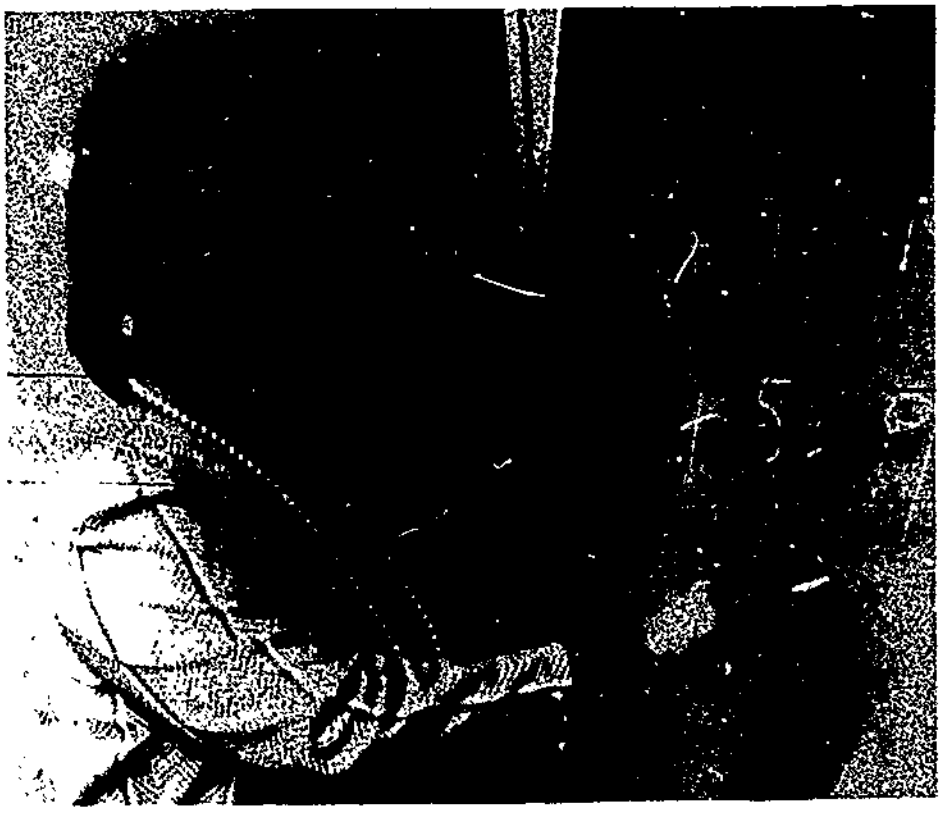
Many years after compensatory education (e.g., Title I) was on its way to being institutionalized, research began to challenge the belief that schools do not make a difference. Weber's pioneering study revealed that students in some urban schools were achieving at higher levels than would have seemed possible given their poor background. The dismal conclusions of early research, which constantly challenged the existence of Title I, were themselves beginning to be challenged.

With support for the belief that schools can make a difference in bringing about greater student learning, the search began for features that might explain the greater effectiveness of some schools. Weber examined schools that were more effective than expected.[2] He found that the "effective" schools were characterized by the following eight factors:

1. Strong instructional leadership
2. High expectations for students
3. An orderly climate
4. Emphasis on reading
5. Careful monitoring of student progress
6. A phonics approach to reading
7. Use of additional reading personnel
8. Individualized instruction

Since Weber's landmark study, other researchers have sought to gain more understanding of what it is that effective schools do that makes them effective. In their search they have concentrated on identifying factors that can be influenced by principals, teachers and other school staff, and that are likely to affect student achievement, attitudes and behavior. Many of the characteristics that Weber identified were confirmed by later research as critical ingredients for effective schooling.[3]

The more prudent among contemporary researchers are quick to point out that there is still much left to learn about the conditions which lead to successful schooling.[4] Nevertheless, the knowledge gained thus far holds new promise for those who believe that schools *do* make a difference and that education *can* be improved through our knowledge of how they make a difference. In the remainder of this document, we will examine the clues and messages that research provides to those interested in improving compensatory education programs.



Teachers Make a Difference

Teachers Make a Difference

Along with its gloomy conclusions about the effects of schooling in general on student learning and achievement, the research of the 1960s and early 1970s also implied that teachers, in particular, make little or no difference in improving student achievement. However, when researchers began to observe teacher and student behavior in natural classroom settings, they came to recognize that the teacher-student relationship is a very dynamic one. Researchers described the teaching process as an interaction with students rather than a formal sequence of prescriptions,[5] not something rigidly tied to content or method of instruction.[6]

Research on teacher effects uncovers a technology of teaching.

Through further investigation of this dynamic and interactive process research has identified, "at least tentatively, practices and behaviors that constitute a technology of effective teaching."[7] For example, Brophy and others have found that:

- **Effective teachers maximize academic learning time** by managing the classroom so that:
  Student attention is focused on learning activities.
  Students are presented with structured learning tasks so they can maintain a high level of success in progress toward acquiring new skills and knowledge.
  The time available is used efficiently, with a minimum of interruptions and with smooth transitions from task to task.

- **Effective teachers use reinforcement.**
  They praise students for successfully performing specific tasks that are related to learning objectives; they avoid criticism.

- **Effective teachers provide direct instruction.**
  They interact directly with their students through questions and answers, demonstration and active helping when appropriate.
  They monitor their students' progress closely.

- **Effective teachers have high expectations for student performance.**
  They communicate these expectations equitably, regardless of race, gender, or achievement levels.

- **Effective teachers use group, whole class or individual instruction,** as appropriate to the learning tasks.
  They minimize the amount of time low achievers spend in homogeneous groups.

With this as an overview, the elements of effective teaching will be discussed further in later sections of this review.

How Are School and Teacher Effectiveness Related?

How are School and Teacher Effectiveness Related?

There is widespread agreement among educators and researchers today on the fundamental ingredients of effective schooling. However, the conclusions of the research are not yet precise enough to formulate specific prescriptions for improvement.[8] Further, since schooling is a complex, dynamic process, no single attribute of school or teacher effectiveness can be considered in isolation from all others. When the attributes are organized by type into groups, however, we can begin to understand them by looking at them in a context of related elements.

Several approaches have been taken in the grouping of these attributes.[9] For present purposes, we have chosen to cluster them as Purkey and Smith did into attributes according to classroom level and school level elements.[10] The classroom (or **instructional**) attributes relate to teacher behavior and practice and the school level (or **organizational**) attributes are those normally established by administrators. The classroom cluster operates within the school level cluster, and it is in the classroom that the important events of learning take place.

The interrelationship of attributes suggests that Chapter 1 programs will become more effective only when schools become more effective.

An advantage of this approach to grouping and studying the attributes is that it reflects the way Chapter 1 operates within the context of a school or district. Just as an effective school provides the framework within which effective classrooms can function, so too is an effective school the framework for a Chapter 1 program, which in turn provides the framework for instructional sessions. Viewed in this way, it becomes clear that Chapter 1 programs will become more effective only when schools become more effective.

Researchers and educators have come up with different listings of effective schooling ingredients and have organized these in different ways. Using our two-cluster approach, the 13 attributes cited by the National Identification Program to identify unusually successful Chapter 1 programs can be arranged as follows:

Organizational Attributes	Instructional Attributes
● Positive school/classroom climate	● Appropriate instructional materials, methods and approaches
● Clear project goals and objectives	● Maximum use of academic learning time
● Coordination with the regular school program/other special programs	● High expectations for student learning and behavior
● Parent/community involvement	● Regular feedback and reinforcement
● Professional development and training	● Closely monitored student progress
● Evaluation results used for project improvement	● Excellence recognized and rewarded
● Strong leadership	

The **instructional** attributes affect students directly. For example, it is the teacher who establishes high expectations, manages the classroom to increase academic learning time, monitors achievement of objectives and gives direct feedback concerning the success of students' efforts.

The **organizational** attributes can be expected to affect a greater number of students, indirectly, and over a longer period of time than those found in any given classroom. For example, once program goals and objectives are established and coordinated with the general curriculum, or once plans are made for staff development and cooperative decision-making, or once evaluation strategies are in place to assess processes and outcomes, the program will reach more students and not be as sensitive to staffing, fiscal or student changes. These attributes are commonly manifested at the building or program level, and thus are within the sphere of influence of a building or program administrator.

Although a Chapter 1 program operates within the school setting, the program coordinator needs to be concerned with these organizational attributes within the Chapter 1 program specifically. Chapter 1 programs are expected to:

- Coordinate goals, objectives and instruction with the rest of the school;
- Identify a functional instructional leader;
- Coordinate staff development with school staff development;
- Have a special history and type of parent involvement;
- Set high expectations for success (which is particularly important for low-achieving students);
- Give special attention to maximizing academic learning time, given the supplemental nature of the instruction provided.[11]

The following discussion of the 13 attributes of school and teacher effectiveness is based upon the research referenced in the notes following the narrative–research which is fully reviewed and summarized elsewhere.[12] The discussion focuses on characteristics relevant to compensatory education and includes examples of how the attributes of effective schooling are exhibited in successful Chapter 1 programs.

Organizational Attributes

Organizational Attributes

All of the organizational attributes contribute to student achievement in varying degrees. Student achievement is dependent upon school climate. School climate is partly determined by the instructional leader, who has considerable influence in coordinating programs, setting and communicating goals and objectives, providing for professional development for teachers, eliciting parent support and involvement and using the results of evaluation to improve programs.

Let's look first at the specific attributes and then at how they fit together.

Positive School/Classroom Climate

As detailed in the work of Brookover, Rutter, and others, schools and classrooms are dynamic social systems in which values, attitudes and behaviors profoundly affect student outcomes.[13] A positive climate is one in which high expectations are communicated for student achievement and social behavior. Behavior is orderly, rules are established early in the year and are applied with fairness and consistency, and classrooms are orderly, structured and purposeful.[14] The physical environment is neat, facilities are in good working order, and the surroundings are reasonably attractive.[15]

Positive climate is the cumulative effect of several attributes.

Examples of positive climate features found in successful Chapter 1 programs include:

Examples from Successful Projects

- Membership on a districtwide "climate committee" aimed at fostering positive climates in schools and programs;
- Use of a discipline policy featuring consistency, clarity, high expectations and respect for students;
- Projects aimed at giving the Chapter 1 program visibility and a positive image within the school;
- Project resource rooms that are well lighted, colorful, orderly and well organized.

Positive climate is the cumulative effect of several of the organizational attributes of success, which are discussed below.

Clear Goals and Objectives

Leaders involve staff, parents and community members in setting goals and objectives.

As observed repeatedly by researchers and reviewers such as Brookover and Edmonds, clear goals and objectives are essential for student success.[16] Looking at successful schools and projects, researchers have found that leaders involve staff, parents and community members in setting goals and objectives. They also make sure that the goals and objectives, once set, are widely communicated to school and community members. This widespread knowledge and participation increases commitment to the program and consistency in pursuing its goals.[17] Successful schools and projects generally have objectives which are stated in precise, measurable terms. Their goals and objectives frequently have to do with student self-concepts and attitudes, as well as academic achievement. In one exemplary project:

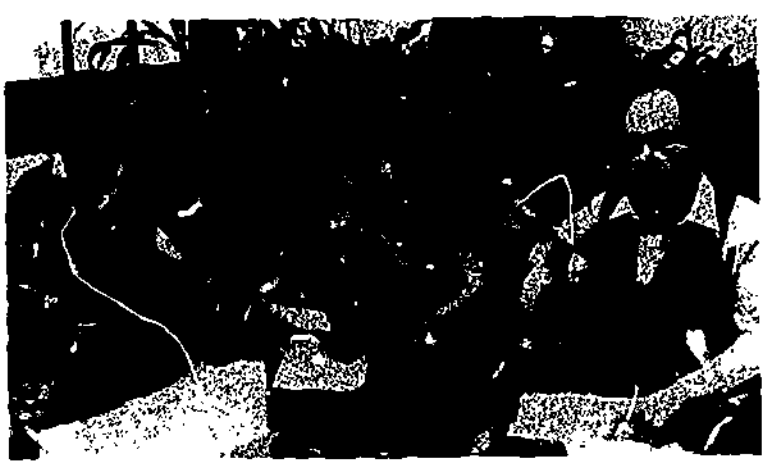
Examples from Successful Projects

> The goals and objectives are the product of an intense effort by the staff and community. The first step was the development of a survey instrument which was administered to diverse constituencies including the Chamber of Commerce, civic clubs, parent organizations and school staff. The second step was the review of student data to identify and incorporate student needs into the goals and objectives. The staff, after review of student data, determined specific objectives for Chapter 1 students. The objectives addressed specific increases in standardized achievement test scores for a given percentage of the students at the end of the year.

Coordination with the Regular School Program/Other Special Programs

Having clear goals and objectives lays the foundation for coordination with the regular school program and other special programs. Because Chapter 1 supplements regular instruction, it is particularly important to avoid situations "where the left hand does not know what the right hand is doing."[18] Coordination of the Chapter 1 program with other school programs increases opportunity to learn by reinforcing basic skills in different instructional settings.[19] Principals and other school leaders are key figures in fostering coordination through collaborative planning and resource sharing.[20] Within and across the various programs operating in a school, instructional resources and tests need to focus on stated objectives so as to achieve alignment of the curriculum.[21] In effective schools and programs, coordination efforts are ongoing, with adjustments made as needed. Principals support this ongoing coordination by encouraging planning groups to work together and by providing opportunities for them to do so. Principals and other leaders carry out coordination activities with an eye to school and program goals and objectives; coordination efforts are structured so as to support those goals and objectives.

Coordination among programs is fostered through collaborative planning and resource sharing.



Strategies used to ensure coordination in successful Chapter 1 projects include:

Examples from Successful Projects

- Regular meetings in which Chapter 1 and regular classroom teachers plan instructional activities;
- Staff work sessions in which the objectives and activities of regular and supplemental programs are examined and more closely matched as needed;
- Chapter 1 teacher evaluations which are based, in part, on how well instruction is coordinated with that of regular classroom teaching;
- Well established and utilized processes for communication and referral among regular, Chapter 1, migrant and special education programs;
- Daily log sheets which detail Chapter 1 and regular teacher communications and which are reviewed by program coordinators and principals.

Parent/Community Involvement

The purposes of parent and community involvement are: (1) to permit parents to participate in policy decisions or as members of advisory councils or groups; (2) to encourage general support through fund-raising or parent-teacher organizations; and (3) to engage parents directly in influencing their children's ability to achieve.

It is unclear how successful compensatory education has been in permitting parents to participate in policy decisions or as members of advisory councils or groups, but as Fullan and others have indicated, parents are seldom responsible for important decisions.[22] *General* support by parents and community (e.g., PTA, chaperones) seems to be weakly related to overall school and program effectiveness.[23] The data are less conclusive about a direct link with student achievement.[24]

Direct parent participation in their children's instruction provides the greatest benefit to achievement and attitudes. Parental tutoring (particularly with advanced parent training) is related to positive student achievement and attitudes.[25] The most effective type of involvement, as reported by Walberg and other investigators, is a collaborative home-school approach in which parents are trained to reinforce academic and social behaviors at home.[26]

The most effective parent involvement emphasizes providing parents with training to extend the classroom into the home.

Successful Chapter 1 projects emphasize providing parents with training to extend the classroom to the home. Here is a good example:

Examples from Successful Projects

A Parent Resource Center is based at the administration building. A Traveling Resource Center goes to the Chapter 1 schools weekly to make it more convenient for parents to check out the materials. Chapter 1 consultants and teachers provide training for the parents in the use of the materials.

Several mini-courses are offered to help parents learn to assist their children with their school work. Most are conducted in both English and Spanish. Some examples are:

- Parents-Partners in Education--This course suggests more than 40 ways parents can work with the school to support their children's learning
- Parent's Helper--Parents learn how to expand the learning experiences of their children.
- Parents Are Teachers--Parents learn to work with children in vocabulary development, teaching shapes, numbers and letters, building positive feelings and development of visual and auditory senses.
- Make & Take Workshop--Parents make learning games in math and reading that can be used at home with their children.

Questionnaires or surveys are sent to parents and used to schedule inservice training. Following each inservice and workshop, forms are distributed asking the parents to share their feelings about the activity. This aids the staff in future planning.

Professional Development and Training

Professional development and training are valued and ongoing functions in high-achieving schools and programs.[27] Effective principals provide more time, opportunity and incentive for staff development than do less effective ones.[28] Fullan and other researchers of change in schools also emphasize the importance of staff development in implementing innovations successfully.[29] Research that directly relates staff development to student achievement is sparse.[30] However, training teachers in the methods shown to be effective by the work of Stallings and Good and Grouws, for example, ought to result in greater student achievement.[31]

The essential characteristics of productive inservice training, as summarized from the research,[32] are:

- Training agendas should be developed for the learners.
- Training should enable teachers to adapt what they learn.
- Inservice should be integrated into the regular school day.
- Support by the administrator is essential.
- Collegial exchange and discussion should follow formal training.
- Technical assistance should be provided (e.g., coaching or modeling).
- Evaluation needs to be an integral part of training.

An example of the inservice activities of a successful Chapter 1 project follows:

Examples from Successful Projects

> The inservice sessions are divided into three parts. First, there is discussion of effective teaching practices as defined by research. Next, there is discussion of instructional strategies with a formal presentation by a teacher, the director, or a guest presenter. Last, there is discussion of administrative items related to the project.
>
> The Chapter 1 staff is involved in the planning, implementation and evaluation of the inservice progam. At the end of each school year the staff is asked to evaluate the inservice sessions and to list the topics they would like covered at the inservice sessions for the next year. The teachers are asked to assist with an inservice session that is in their area of expertise.
>
> Every Chapter 1 staff member writes a job target (goal) to improve instruction. The job target is implemented and evaluated during the school year.

Evaluation Results Used for Project Improvement

Evaluation helps policymakers select schooling practices with intelligent, informed care.[33] It may help them:

- Identify what is desirable through a needs assessment;
- Decide which practices are successful in improving student achievement or attitudes, teacher attitudes or even parent attitudes;
- Decide how to implement a new strategy and monitor it, making corrections as necessary;
- Assess the outcome to see if there has been improvement.

Program evaluation is a willingness to change--to improve as indicated by evaluation results.

A program evaluation is an integral part of school improvement efforts.[34] Evaluation is a belief system more than it is a system of collecting, analyzing, reporting and utilizing data on program activities. It is a willingness to change as indicated by evaluation results.

Schools and districts which are effective at implementing change have established ways to gather and use evaluative information for instructional decision making.[35] They have established:

- A group of people who can use an evaluation information system;
- A system for gathering the information and providing it to staff, with inservice on how to use it.

Successful schools have well established methods for communication and coordination, so that the evaluation data are available to those who need this information to make decisions.

The use of evaluation at the program level, and specifically for Chapter 1, is slightly different from its use at the school or district level. As Fullan has noted, most federal and state programs require evaluation, but the focus is compliance and general outcomes, rather than specific program improvement.[36] Within Chapter 1, researchers have found that improvement has usually resulted from subjective information, such as program staff observation of program operations.[37]

Evaluation assumes that if weaknesses are identified, there are appropriate prescriptions that can be developed. The increase of knowledge resulting from the research on effective schools and teachers means that more prescriptions are available today than ever before. This should encourage greater utilization of evaluation because evaluation results will guide decision-makers in their program improvement efforts.

Many unusually successful Chapter 1 projects use formal evaluation data for program improvement. Several examples follow:

Examples from Successful Projects

- Staff-adopted, in-class instruction for primary level children based on evaluation results showed greater achievement gains using this approach than pull-out instruction.
- Evaluation results made program and district staff aware of the special needs of the district's native American students. Special services were implemented to provide support for these students.
- Another program used its evaluation findings to refute a proposal to cut an entire grade level from receiving Chapter 1 services.
- Teacher evaluation activities in one program led to the development of inservice packets to help teachers improve their teaching.
- Evaluation results stimulated the development of a management system to improve Chapter 1/regular program coordination in one midwestern district.

Strong Leadership

The last organizational attribute is strong instructional leadership. Brookover and Lezotte, Edmonds, Leithwood and Montgomery, and many other researchers have found that strong leadership is virtually always present in effective schools.[38] Researchers have also noted that the cause and effect relationship can work both ways: Strong leaders may bring about effective schools, but effective schools and their teachers are just as likely to nurture the development of strong leaders.[39] Research has identified a substantial relationship between certain leadership characteristics and effective schools, although these leadership characteristics have not as yet been shown to be directly related to student achievement.[40]

Effective principals (principals being the focus of most of the research on school leadership) are believed to contribute to student achievement by creating a positive climate in which students can learn and teachers can teach.[41] This involves management functions in two overlapping categories: (1) attending to goals of the school; and (2) motivating and supporting staff to fully utilize their capabilities.

"Attending to goals" includes four of the attributes of success we have been discussing: goals and objectives, coordination, parental involvement, and evaluation. Effective instructional leaders help establish and implement clearly defined goals related to achievement. They accomplish this, according to the findings of Rutter, Venezky and Winfield, and numerous others, by facilitating communication and collaborative planning among staff.[42] Berman and McLaughlin have noted that effective leaders view parental support for school and program goals as essential and actively enlist this support.[43] Leaders recognize and encourage collegial activity and may pursue it through joint planning and problem solving at faculty meetings[44] or through building-level specific staff development programs.[45] The supportive atmosphere and shared decision making create an atmosphere of open communication which facilitates coordination among programs and grade levels.[46] Finally, effective leaders make certain that evaluation procedures are used to find out if goals and objectives have been met, and they make sure that evaluation results are fed back into the planning process.

Effective leaders facilitate communication and collaborative planning among staff.

"Supporting staff capability" addresses professional development and, to some extent, evaluation.[47] Effective leaders emphasize structured inservice training and encourage teacher participation. They are heavily involved in evaluation of teacher performance to ensure the delivery of high-quality classroom instruction.

Instructional leaders within exemplary Chapter 1 programs display characteristics very similar to effective principals.

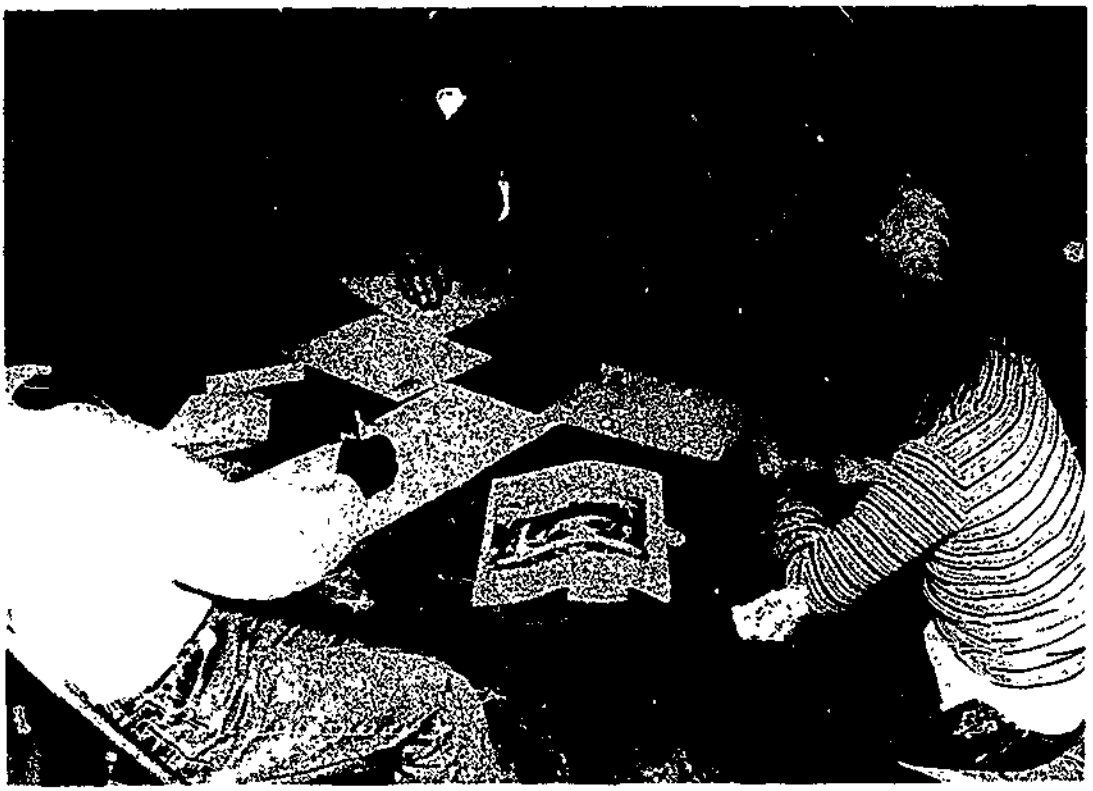
Instructional leaders within an exemplary Chapter 1 program have characteristics nearly identical to the criteria for leadership in effective schools. For example, a Chapter 1 program recognized as outstanding, described its leadership characteristics as follows:

Examples from Successful Projects

> The building principals support the Chapter 1 project through their democratic leadership. They work with the project director to develop the needs assessment and ensure that the Chapter 1 project is an integral part of the educational plan. They monitor the project activities and evaluate staff. Principals also communicate to the school and community how the Chapter 1 project assists the district in achieving academic excellence. They confer with the staff about instructional matters, agree upon goals, and help staff to create and maintain safe, orderly and businesslike environments.

> The project director (according to respondents to a questionnaire) is highly knowledgeable about supplementary educational programs, techniques, methods, materials and instructional activities. She presents well-received workshops, along with follow-up meetings and classroom visitations. She is viewed by staff as being very accessible, task oriented and sensitive to staff needs. In addition, she has high expectations of the students, staff and administrators.

It can readily be seen that while the influence of these organizational attributes on student outcomes is indirect, it is nevertheless very real and persistent. The presence of these organizational elements is also vital to setting a positive context for the classroom level, instructional attributes we will now address.



Instructional Attributes

Instructional Attributes

The second set of attributes of success is organized under instructional processes. This is not to imply a strict division between the two sets. To some degree, each of the attributes described in this section could be discussed within the context of the organizational set. For example, the school or program leader has a hand in implementing all of these attributes, but it is the teacher who utilizes them directly, in the classroom, to improve student achievement. This direct contact with students and the direct effect upon them is the rationale for discussing the remaining attributes in relation to one another and apart from the schoolwide organizational elements.

Appropriate Instructional Materials, Methods and Approaches

This attribute is broader and includes more elements than those we have discussed so far. It takes in such things as instructional style and pacing, student-teacher interactions and student grouping strategies. The following paragraphs describe effective practices in these areas, as revealed in the extensive research on instruction.

Interactive teaching is an instructional approach which has a good deal of research support. It is a combination of two similar instructional methods: direct instruction and active teaching.[48] Interactive teachers begin by presenting concepts, then explaining the meaning of those concepts, providing relevant practice activities and finally monitoring those activities prior to assigning any seatwork. They attempt to find out how well their presentation has been understood. They take responsibility for students' learning and are ready to reteach if necessary.[49] The instructional steps as detailed in the work of Brophy, Good and Grouws, and Rosenshine are described in more detail in the following paragraphs.[50]

New material is presented first with an overview, then with small but brisk steps.

The lesson starts with *review* of the previous day's work and reteaching of concepts if needed. New material is presented first with an overview, then with small but brisk steps. Detailed and even redundant explanations are provided, and student understanding is checked.[51]

Guided practice of student performance by the teacher is the next step. This includes asking questions, guiding students to the correct answers, checking for understanding, providing feedback, reteaching if necessary and giving continued practice at a high success rate.[52] The last step has been shown to be especially important. When asking questions and checking for understanding, low-achieving students should not be permitted to avoid a response.[53] Feedback to students who are hesitant is important and may help other students as well. Corrective feedback can also be given by simplifying questions or giving clues.[54] Errors should be corrected in some manner, whether this means the teacher will give clues, simplify the questions or reteach.

The next phase in the lesson is *independent practice*. Students practice newly acquired knowledge or skills until these become automatic. The teacher explains the activity, then monitors student work by actively circulating among students and asking questions.

Periodic review is the last element in the structured lesson. The teacher checks again for understanding, reteaches if necessary, and checks on the pace of the teaching.[55]

These components of interactive teaching can be readily adapted to Chapter 1 programs in which small, relatively homogenous groups are the norm.

There is considerable controversy among researchers and educators regarding the effect of *ability grouping* on students. The term refers to organizing students into instructional groups with students of similar ability. This is particularly relevant for Chapter 1 programs, where children are pulled out of class because they are viewed as needing supplemental instruction. Thus, they already represent an "ability group" when they arrive at the Chapter 1 classroom.

Among secondary school students the benefits of grouping tend to be minimal[56] except among high-ability students, those considered talented and gifted. Although middle- and lower-ability students do not gain from ability grouping, neither do they experience a loss.

Ability grouping must be done in a way that does not communicate lowered expectations.

At the elementary level, students are most often grouped for reading instruction. During reading lessons teachers tend to ask students in the lower-ability groups to read aloud and to read from flash cards, rather than from stories.[57] Teachers tend to correct these students' oral reading mistakes more than those of high-achieving students and to give clues emphasizing pronunciation rather than meaning. This research was done in classrooms where one teacher oversaw two or three groups. Thus, the conclusions may not be perfectly applicable to Chapter 1 programs, where one teacher oversees one group doing individualized work. Still, Chapter 1 teachers should be aware that these instructional differences might communicate lowered expectations to students and thus be detrimental. (More information on expectations is presented later in this section.)

Pull-out is the procedure of removing children from their regular classroom to receive Chapter 1 services. Glass and Smith, and Cooley and Leinhardt have found that pull-out may introduce a potentially negative distinction between Chapter 1 and regular students;[58] and research has so far found mixed results in terms of student achievement.[59] If pull-out is deemed necessary for administrative or management purposes, however, implementing sound educational practices may overcome potentially negative effects. And there does seem to be an advantage to small groups for the interactive teaching discussed earlier.[60]

Curriculum alignment has been effective in avoiding pull-out.

Nevertheless, as noted by Harnischfeger, the disruption of being pulled out and the stigma of being perceived as a lower-ability student warrants consideration of alternative arrangements.[61] Alignment of curriculum, instruction and testing with specific objectives has been effective in avoiding pull-out in some Chapter 1 schools.[62]

The next feature of appropriate instruction we will discuss is a collection of instructional strategies which have received considerable attention from researchers in recent years: mastery learning, individualized instruction, adaptive learning environments and cognitive education.[63] We will also discuss cross-age tutoring as a successful instructional strategy.

Mastery learning refers to a learning sequence where each step is successfully mastered before moving to the next step. Each student is given the amount of time he/she needs to achieve the criterion, and receives systematic feedback to identify and correct errors soon after they occur.[64] Mastery learning is intuitively appealing and generally has produced favorable results.[65] Furthermore, its elements (frequent cues, contingent and appropriate reinforcement, maximizing student participation, and giving frequent feedback/correctives) are similar to those of interactive instruction. Unfortunately, many of the research studies supporting mastery learning are with secondary or college-age students over a short period of time.[66]

A frequent application of mastery learning is the strategy of *individualized instruction*. It involves specific learning objectives for individual students, pacing of instruction within small groups or individually, individual diagnosis and prescription, and flexibility to use different sequences of materials to achieve objectives.[67] Individualized instruction increases the students' opportunity to be engaged in academic tasks.

Individualized instruction has been noted in exemplary compensatory education projects,[68] but it is difficult to implement and manage.[69] Some applications minimize active teaching and interaction with other students because they rely heavily on seatwork using worksheets or other printed material.

Two additional strategies are *adaptive learning environments* and *cognitive education*.[70] The first strategy combines the general sequence of mastery learning with the specific diagnosis and prescription of individualized instruction. Available research suggests that students are on task an average of 70 percent of the time when using this model. Even so, achievement gains are equivocal. *Cognitive education*, which needs further development for classroom application, teaches students how to learn. Various cognitive strategies such as remembering, organizing and synthesizing information are emphasized.

Cross-age tutoring provides a student support system and improves achievement.

One last method, *cross-age tutoring*, deserves particular attention bec e it has been shown to be related to achievement and because it permits student interaction. The benefit of student interaction is that it provides a student support system and thus may help to minimize the stigma some Chapter 1 students feel about their special status. Cross-age tutoring is well supported by research.[71] It has been effective for lower-ability students in the primary grades (1-3) where tutors were slightly older (grades 4-6). Short-term tutoring (less than five weeks) was very effective. The best results were found with math, where tutoring was twice as effective as it was for reading. (This method seems to be particularly useful for lower-achieving students.)

Because instructional attributes are many and varied, they are expressed in a wide variety of ways in successful Chapter 1 projects. Typical examples include:

Examples from Successful Projects

- Frequent unit tests to ensure appropriate placement and mastery of math learning objectives;
- The division of learning activities into small units, focusing on one or two skills at a time, allowing students to experience success each day;
- The provision of individualized study skill activities based on the material introduced and explained in the regular and Chapter 1 classrooms;
- Cross-age tutoring, with intermediate level tutors receiving training and ongoing supervision as they work with primary level children in reading;
- A combination of pull-out and in-class instruction for different kinds of Chapter 1 program activities to provide variety and reduce the disruption caused by frequent classroom changes;
- Direct instruction techniques which emphasize providing clear instructions, reteaching as needed, providing for independent practice and maximizing teacher-student interactions as new material is presented and discussed;
- Computer assisted instruction to reinforce skills, allow for individual pacing and enhance student motivation.

Maximum Use of Academic Learning Time

Closely related to the use of appropriate instruction, materials and methods is the concept of time on task. This refers to the amount of time a student is actively involved in learning a specific skill or subject. If we increase a student's time on task, his/her achievement in the area of the task ought to increase. This seems obvious, but it is not as simple as it sounds.

The Beginning Teacher Evaluation Study (BTES), initiated in the early 1970s, has promoted the study of the teaching and learning process, specifically various aspects of instructional time.[72] Berliner and other BTES researchers introduced the concept of *academic learning time* (ALT). ALT incorporates three distinct components, each of which can be measured. *Allocated time* is the amount of instructional time available for the students to work on academic tasks. This time is determined by the district, school and teacher and may be classroom time or some other time established for an instructional session. *Engaged time* is the proportion of allocated time during which the student is paying attention to a task and attempting to learn, and is frequently referred to as "time on task." *Level of difficulty* is a measure of the appropriateness of the task, in terms of the challenge the task poses for the student and the degree of success the student has in performing it. [73]

How much time is available for instruction is not as important as how the time is used.

The way instructional time is allocated by teachers varies. In reading, teachers were found to allocate from as few as 35 minutes per day in reading to as much as 126 minutes.[74] Time allocated for mathematics has been shown to vary from 27 to 53 minutes per day.[75] Although allocated time sets the stage for learning, it is ALT which consistently has been found to be related to increases in achievement: how *much* time is available is not as important as *how* that time is used.[76]

Teachers who make the most of ALT demonstrate effective classroom management as detailed in the works of Emmer, Evertson, Anderson, Brophy and others. The well-managed classroom is focused on academics, and there is a minimum of disruption.[77] Teachers establish rules and routines. They explain the reasons for the rules and have the students practice following them, particularly in the lower grades.

Classroom interruptions are minimized by the use of routines, such as having one or more students assigned to help others and having specific times set aside for seeking teacher help. They use formal lesson plans.

Successful Chapter 1 programs make the most of academic learning time, for example:

Examples from Successful Projects

- In an elementary reading project, students are trained in the efficient use of resource room time; observers have noted a 75 percent time-on-task rate in project classrooms.
- Intermediate level reading instruction is scheduled in one midwestern project so that students do not miss the introduction of new material in their regular classrooms.
- Careful teacher planning and classroom organization are credited with the smooth and efficient operation and extensive content coverage noted in one eastern seaboard math project.
- In another math project, monitoring student success rate helps ensure that time spent on task is challenging to students and not mere "busy work."
- A reading project serving grades 1-6 is characterized by several features which promote efficient time use: collaborative scheduling, consistent application of classroom discipline policies, smooth transitions between activities and parent-monitored homework.

If the amount of time students spend in learning a skill is related to achievement, it is reasonable to expect that more time spent at home studying or practicing the skill should also improve achievement. The amount of *homework* is positively related to student achievement. While research with primary age students is lacking, students beyond grade 3 who do homework outperform their peers who do no homework. This relationship between homework and achievement holds up across social and ethnic groups. The relationship between homework and achievement is strongest in reading comprehension and mathematics concepts. The same relationship existed for 17-year-old high school students in mathematics skills, which was the only area tested.[76] More

Teachers should always grade some of the homework problems assigned and teachers' written comments are beneficial.

homework resulted in higher grades across all ability levels for high school seniors.[79] A summary of research on homework in mathematics, covering grades four through ten, supported the use of homework. Other conclusions from this investigation were that teachers should always grade some of the homework problems assigned, teachers' written comments are beneficial and early feedback is preferable to delayed feedback.[80]

High Expectations, Monitoring, Feedback/Reinforcement, Recognition/Rewards

Of the attributes of effective schooling identified in the Secretary's Initiative, the classroom level instructional elements we have yet to discuss in detail include:

- *High Expectations for Student Learning and Behavior*
- *Closely Monitored Student Progress*
- *Regular Feedback and Reinforcement*
- *Excellence Recognized and Rewarded*

Because these attributes are so overlapping, they will be discussed together in the following paragraphs.

The research on effective schooling consistently leads to the same conclusions regarding the interrelationship of these four attributes. In effective schools and projects, academic goals and objectives are planned collaboratively. Staff communicate the goals to students, parents, and community members, along with the expectation that students can and will achieve them. The students' progress towards the goals is closely monitored. Cues and correctives (techniques which are inherent in direct instruction and mastery learning) provide regular feedback and reinforcement. Student monitoring identifies errors and the provision of regular feedback and reinforcement ensures that these errors do not go uncorrected. Students are informed of the criteria for academic recognition, and success is recognized according to these criteria. In addition to high achievement, effort is also important and is recognized. The rewards and recognition vary from setting to setting and may include schoolwide award ceremonies, supportive comments, student work displays and prizes.[81]

In discussing high expectations it is helpful to know how student achievement and behavior are affected by the messages students receive about what is expected of them. These messages need not even be given consciously to have a powerful effect on students. Indeed, teachers are sometimes unaware of the messages inherent in their behavior,[82] and this is not surprising. For one thing, the instructional session is a busy time and the teacher may be involved in dozens of interactions with students. Moreover, teachers have seldom been trained to monitor or evaluate their own behavior, and they rarely are provided with useful feedback. This is unfortunate, because the research of Good, Brophy and others has clearly shown that teachers' expectations can function as self-fulfilling prophecies. Good and Brophy provide background reading, scenarios of appropriate and inappropriate teacher expectations, a list of activities and questions, and observation forms for measuring teacher behavior related to expectations.[83] Other commercially produced training material is available. The current view is that teachers' expectations affect the way they behave in instructional situations, and their behavior in turn affects the way students respond.[84]

Student achievement and behavior are affected by messages students receive about what is expected of them.

It is important for teachers to have confidence in their students' ability to learn and in their own ability to teach.[85] If expectations are unrealistically high, however, frustration for both student and teacher is likely. Expectations should be appropriate to the student's level, [86] and teaching should convey confidence, provide for success and lead to continued improvement.

The feedback and reinforcement commonly used by successful teachers is corrective and motivational. Corrective feedback, as we have noted, ensures that errors are detected and clues to the accurate answer are provided. Praise and rewards (symbolic and concrete) are *motivational* feedback and are used to encourage students.[87]

Research such as that conducted by Brophy and Evertson has provided valuable information about the uses and effects of *teacher praise*. Such praise, when used to reinforce behavior, is most effective when it is infrequent, credible, specific, and contingent.[88] Unfortunately, praise is more apt to be given spontaneously or ritualistically, regardless of

Praise is most effective when it is infrequent, credible, specific, and contingent.

students' success or effort, than given contingent upon desirable performance. Specific praise gives the particulars of the behavior being reinforced. Credible praise is sincere and genuine.

The potency of teacher praise seems to diminish after the lower elementary grades.[89] This finding is consistent with research in developmental psychology and supported by ratings of high school students and teachers. Regardless of age, and despite its general weakness as a reinforcer, praise can be encouraging. It can build self-esteem and it can establish a friendly teacher-student relationship. Moreover, teachers can supplement praise by writing specific, informative praise statements on the work returned to students, particularly statements that are geared toward students' own expectations of their performance.[90]

Symbolic and concrete rewards are other forms of reinforcement and feedback and may even be considered an indirect type of teacher praise. Symbolic rewards, such as stars sent home to parents or teachers' smiling faces in the classroom, were associated with achievement in the lower grades of both low and high socioeconomic status (SES) schools.[91] Concrete rewards at the high school level seem to have little influence on achievement and may have a negative effect on intrinsic motivation.[92]

Praise expressed with warmth and encouragement seems to be a useful reinforcer for learning for low-ability/low-SES students in lower grades. For upper grades and higher SES students, *corrective feedback* (i.e., informational feedback about the accuracy of response) is effective. This does not mean that corrective feedback is inappropriate for low-ability students. However, corrective feedback may be construed as criticism by younger children, and because criticism is not helpful to them, emphasis on praise and encouragement appears to be best.[93] Symbolic rewards that are brought to the parents' attention are useful incentives, but prizes seem to have no positive (and possibly a negative) effect on motivation.

The remaining two attributes, *recognition and reward of excellence* and *closely monitored student progress*, have been covered in the foregoing pages. Recognition of excellence conveys high expectations and is a type of reinforcement.

Monitoring enables the teacher to know what sort of feedback and reinforcement to provide and when to recognize/reward student performance. (For a review of the specific actions involved in monitoring, see the section on instructional methods.)

These four attributes—setting high expectations, providing feedback and reinforcement, recognizing excelience, and monitoring student progress—are exemplified by successful Chapter 1 projects. Excerpts from such projects follow:

Examples from Successful Projects

- We practice giving specific appropriate feedback ranging from "You're really getting good at sounding out long vowels!" to "I like the way you're trying—you're on the right track!"
- Because the self-concept of many of our students is low, we really strive to produce a climate where tender loving care abounds and there is no embarrassment if an answer is incorrect.
- Encouragement is given for effort and attitude, as well as achievement.
- Teachers see to it that each child experiences some specific success each day, such as winning at a game, mastering a time table, or learning new words on a teaching machine.
- Teachers have carefully diagnosed the needs of the child by using criterion-referenced tests and they make sure they always give the child work he or she can do.
- Teachers scrupulously avoid reprimands and statements like "You're wrong"; they correct a child positively by pointing out, for example, how many he got right on the page instead of how many wrong.
- Many techniques are used to recognize student progress in the Chapter 1 projects. These include: awards and certificates, letters and phone calls to parents, awards given to students during special schoolwide assemblies, displaying of student work during open house observances and school visitations, "graduation" ceremonies for students testing out of the program, and special awards from the principals.

Educational Improvement and The Process of Change

Educational Improvement and the Process of Change

Our overview of the research literature provides us with descriptions of the kinds of school and classroom practices that can enhance student achievement and other outcomes. Readers of this document may already have considered making school or program changes based on the information presented. There are, however, some additional considerations to take into account before planning changes based upon these research findings.[94]

1. The attributes of effectiveness are abstractions derived from many school and instructional sites. Research findings may not have been based on schools just like yours. Nevertheless, most of these attributes have been shown to be important across many different school settings. Thus, we can assume that findings emerged from enough different kinds of settings to have general applicability.

2. While the attributes are clearly related to student performance, they may not, by themselves, *cause* higher student performance. Thus, use of the practices associated with one or more of the attributes may not bring about high student performance automatically. However, the strength of the findings and the overwhelming corroboration across studies suggest that implementation of these practices can lead to improvements in student performance.

3. The research literature does not, for the most part, tell us how an effective school or instructional session *became* effective. What was the process? How did they get to be the way they are? We know from the work of

Fullan, Hall, Loucks and others that educational change is (a) complex, (b) a process, not an event, and (c) very personal.[95] We also know that change (i.e., implementation of some innovation) requires modification of improvement strategies to meet the needs of the teachers and constraints of the school.[96] The innovation will be shaped to suit local needs and circumstances and can be expected to be used differently at a given school or classroom than in the research studies or even at a neighboring school or adjacent classroom.

Among major studies of educational change, such as those conducted by Fullan, Berman and McLaughlin, several characteristics of effective implementation were observed. They are summarized as follows:

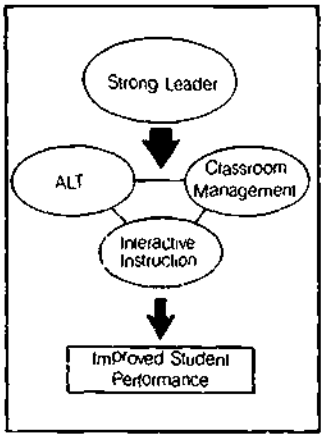
Expect program improvement to be time consuming, initially confusing and to require administrative support.

- Change takes place over time.
- Initial stages of change involve anxiety and confusion.
- Ongoing technical assistance and psychological support are important to cope with the change-induced anxiety.
- Change involves learning new skills through practice and feedback.
- Most success is found when the participants cognitively understand why the new way works better.
- Administrative leadership and district support are necessary.
- Successful change involves pressure, but pressure through interaction with peers, technical staff and administrative leaders.[97]

The following four strategies may be helpful to staff of schools and programs seeking to bring about program improvement.[98]

- Use volunteers to help with program improvement, rather than dictate who the participants will be.
- Attempt change on a complex scale (more is better), but do it incrementally.
- Emphasize "faithful implementation" at the early stages if the innovation is well-proven. If it is not a proven winner, some initial variation is justified and probably desirable.
- Use a formal plan supported by informal activities to promote interaction and dialogue.

We have shared with you an overview of the research supporting the 13 attributes of effective teaching and schooling. They are complex, interrelated, and sometimes not fully explicated to permit ease of application. Nonetheless, there are attributes which are realistically within the realm of the Chapter 1 teacher to implement. We recommend components of the following attributes to improve Chapter 1 student performance. The combination is illustrated in the diagram in the margin. First, Chapter 1 coordinators and principals should facilitate improvement by taking a strong leadership position. This means enthusiastically encouraging professional development and allocating time and resources to teachers for the inservice necessary to learn and share new concepts. Teachers should apply the principles of *Academic Learning Time* (ALT) so that students have high rates of time on task (70 percent or more), the materials they are given match the materials tested and students experience high success rates (80-90 percent on basic skill learning). From the attributes *appropriate instructional materials, methods and approaches* and *closely monitored student progress,* teachers should use structured lesson planning, apply classroom management techniques and emphasize interactive instruction.



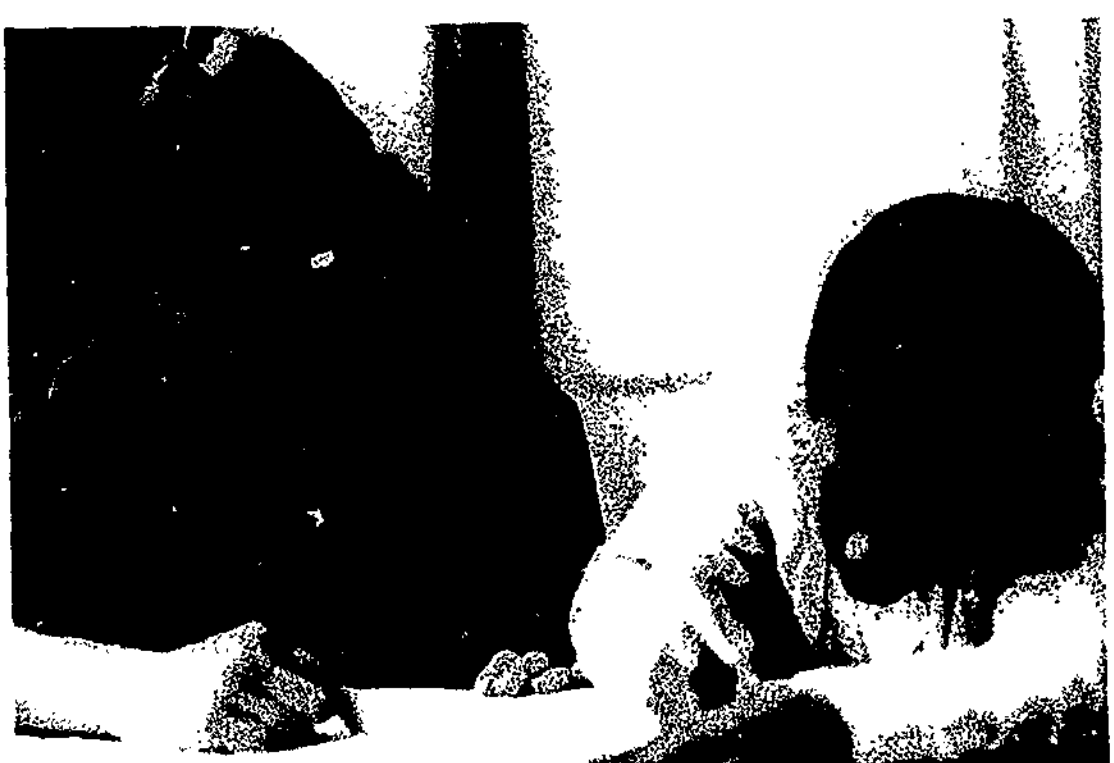
Model for Program Improvement

Educational improvement requires interaction among the staff, but schools provide limited opportunities for interaction.[99] Although the amount of interaction among teachers, principals, central offices and state departments of education is less than ideal, improvements are occurring. Given the established interaction among Chapter 1 staff (i.e., SEA to district, district to teacher), programs may provide more opportunity for interaction than schools. Thus, strategies to increase school effectiveness may be even more successful when they are applied to Chapter 1 programs.

It is our hope that the foregoing review will give readers an understanding of what the attributes of effective schooling are and what these attributes look like in actual school and classroom settings. This understanding can be profitably applied to improve education for the Chapter 1 student.

Researcher Ronald Edmonds claimed that schooling failures were caused by inertia, unwillingness and a sense that nothing could be done. The research on effective schooling demonstrates that much *can* be done, and as this volume reveals, much *is* being done when knowledge, commitment and motivation are present. Edmonds summed it up nicely during a teacher training exercise when he said:

The lesson it teaches for all of us is that these characteristics that describe effective schools are practical, they're obtainable, and if we're serious..., systematic and thoughtful enough it means they can come to describe all of the schools that we work in.[100]



References and Notes

References and Notes

1. These very large, national studies were designed to identify the extent to which schooling factors, family background, self-concept measures, and socioeconomic status were related to student achievement. They are:

   Averch, H. A. Carroll, S. J., Donaldson, T. S., Kiesling, H. J., & Pincus, J. (1974). *How effective is schooling? A critical review of research.* Englewood Cliffs, NJ: Educational Technology Publications;

   Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. (1966). *Equality of educational opportunity.* Washington, DC: U.S. Office of Education;

   Jencks, C., Smith, M., Acland, H., Bane, M. J., Cohen, D., Gintis, H., Heyns, B., & Michelson, S. (1972). *Inequality: A reassessment of the effect of family and schooling in America.* New York: Basic Books.

2. Weber, G. (1971). Inner-city children can be taught to read: Four successful schools. CBE Occasional Papers, No. 18. Washington, DC: Council for Basic Education. (ERIC Document Reproduction Service No. ED 057 125.) The study suffers from two major problems however: (1) lack of less successful schools for comparisons, and (2) unclear definitions of his school characteristics.

3. Edmonds, R. R. (1979). Effective schools for the urban poor. *Educational Leadership, 37,* 15-27. Inertia, unwillingness and a sense that "nothing can be done" are, in this reviewer's judgment, the problems which underlie the American educational system's failure to provide quality education to the children of the poor. By way of establishing that much can be done if commitment is present, the author offers a review of research on schooling practices which can and do enable poor, inner-city children of all ethnic backgrounds to achieve and to have positive feelings about themselves and their school experiences. Findings from the studies reviewed are summarized, and conclusions are drawn about "the most tangible and indispensable characteristics of effective schools" (p. 22). These include: (1) strong administrative leadership; (2) high expectations for student learning; (3) orderly school and classroom environments; (4) placing basic skills acquisition above all other goals; (5) use of school resources to support priority goals; and (6) frequent monitoring of student progress. Concluding remarks have to do with school improvement as a political issue, not an issue likely to be resolved by social scientists.

   Edmonds, R. R. (1977). *Search for effective schools: The identification and analysis of city schools that are instructionally effective for poor children.* Boston, MA: Harvard University. (ERIC Document Reproduction Service No. ED 142 610.)

4. Cuban, L. (1983). Effective schools: A friendly but cautionary note. *Phi Delta Kappan, 64* (10), 695-696.

   Rowan, B., Bossert, S., & Dwyer, D. (1983). Research on effective schools: A cautionary note. *Educational Researcher, 12* (4), 24-31.

   These scholars warn that cause and effect among effective practices and student performance have not been established. Furthermore, effectiveness is determined by positive student outcome data, not only by the presence of the effective practices.

5. Mackenzie, D. E. (1983). Research for school improvement. An appraisal of some recent trends. *Educational Researcher, 12* (4), 5-17. Beginning with this quotation on p. 6, a detailed background of school improvement research is presented. The author acknowledges the omission of work addressing implementation and change, however.

6. Brophy, J. E., & Evertson, C. M. (1976). *Learning from teaching: A developmental perspective.* Boston, MA: Allyn and Bacon. This research study reports the effects that teachers' behavior and expectations of their students have on student achievement and attitude. The students and teachers were observed in urban, elementary classrooms. It also addresses teacher questioning patterns, use of praise and expectations for student success.

7. Brophy, J. E. (1979). Teacher behavior and its effects. *Journal of Educational Psychology, 71* (6), 733-750. This article reviews recent research on the relationship between teachers' instructional and managerial behavior in the classroom and student achievement in basic skills. Methods found to promote achievement include: (1) structured, teacher-directed instruction; (2) brisk instructional pacing; (3) frequent feedback and reinforcement; and (4) communicating the expectation that all students can learn. Suggestions for methodological improvements and future directions are offered to educational researchers.

Hawley, W. D., Rosenholtz, S. J., Goodstein, H., & Hasselbring, T. (1984). Good schools: What research says about improving student achievement. *Peabody Journal of Education, 61* (4). This monograph reviews a substantial body of research in order to identify ways that schools can be more productive with academic achievement. The authors divide the research into five dimensions: (1) effective teaching; (2) school leadership and student learning; (3) schoolwide learning environment; (4) learning resources; and (5) parent involvement and assistance.

8. Reviewers and researchers also do not agree on what word to use when referring to an effective practice. Sometimes it is a *practice* associated with an effective school, sometimes a *factor* or *element* or *ingredient* or *characteristic*, or *attribute*. To be consistent with the Secretary's Initiative, we will use "attribute" to describe any of the classical correlates of effective schooling (e.g., strong instructional leadership, high expectations of students) or subsets (e.g., recognition of achievement, evaluation results used for improvement) or characteristics not traditionally included (e.g., parent or community involvement).

9. Goal Based Education Program. (1984). *Effective schooling practices: A research synthesis.* Portland, OR: Northwest Regional Educational Laboratory. Drawing from nearly 300 primary and secondary sources, this synthesis presents, in list form, the classroom, school, and district characteristics and practices found to be positively related to student achievement and behavior outcomes. The elements of effective schooling are organized into five groups of variables: (1) a clearly defined curriculum; (2) focused classroom instruction and management; (3) firm, consistent discipline; (4) close monitoring of student performance; and (5) strong instructional leadership. Specific sources are given following each cluster of variables, and the bibliographical entries are coded according to the kind of research effort each document represents.

Mackenzie (1983), op. cit. As an example, under the dimension of efficacy, high expectations were considered a core element and emphasis on homework and study was a facilitating element.

10. Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. *Elementary School Journal, 83* (4), 427-452. The authors provide an extensive review and critique of the literature on school effectiveness. While taking issue with the methods used by some researchers and reviewers, Purkey and Smith draw conclusions congruent with those cited in the school effectiveness research generally. School-level factors deemed most important for quality education are presented within the two categories: (1) organization-structure variables and (2) process characteristics of school culture. They also address the difficulties encountered in educational change strategies.

11. Personal communication, Christine Dwyer, ECIA Chapter 1 Evaluation Technical Assistance Center, Region 1, July 26, 1985.

12. Brookover, W. B., & Lezotte, L. W. (1979). *Changes in school characteristics coincident with changes in student achievement*. East Lansing, MI: Michigan State University, College of Urban Development. (ERIC Document Reproduction Service No. ED 181 005.) Eight low SES urban elementary schools were studied to determine the factors associated with the achievement gains noted in six of them and with the achievement decline noted in two of them. Researchers conducted interviews with and administered questionnaires to school personnel. Results were analyzed in relation to the math and reading achievement scores of students in grades four and seven. Researchers found that, in contrast to the declining schools, the improving schools: (1) placed much greater emphasis on the accomplishment of basic reading and mathematics objectives; (2) communicated the belief that all students can master the basic objectives; (3) held relatively high-levels of expectation for student learning; (4) were staffed by teachers who held themselves responsible for student learning; (5) devoted more time to achieving basic mathematics and reading objectives; (6) had principals who served as instructional leaders and evaluators of the instructional program; (7) had staffs who viewed statewide testing results as a measure of their effectiveness; (8) displayed less staff satisfaction, presumably because of the staffs' continual striving to improve schooling conditions; (9) had less parent involvement, but more parent-initiated involvement; and (10) used fewer paraprofessionals for instruction and involved regular teachers less in the selection of students for compensatory education services.

Goal Based Education Program (1984), op. cit.

Mackenzie (1983), op. cit.

Purkey & Smith (1983), op. cit.

Rutter, M., Maughan, B., Moritmore, P., and Ouston, J. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. Cambridge, MA: Harvard University Press. The achievement, attendance, employment and delinquency patterns of students in 12 London secondary schools were analyzed in relation to social and instructional characteristics of these schools. The study's subjects were ten years old when the study began and were followed by three years. Data on student ability level and background factors were utilized in the analysis to reduce the likelihood that results were produced by non-school factors. The effective schools (those whose students fared better on the outcome measures) differed from the less effective or ineffective schools in the following ways: (1) more academic emphasis, higher teacher expectations and closer student monitoring; (2) better class management and time use; (3) rewards and praise were given and given fairly; (4) better planning and more teacher collaboration in curriculum development; and (5) neater, better maintained facilities. These reviews emphasize effective school characteristics, but include effective classroom characteristics and teacher behaviors. The next set of references addressed effective teaching practices (i.e., teachers' instructional and managerial behavior) related to achievement.

Squires, D. A., Huitt, W. G., & Segars, J. K. (1984). *Effective schools and classrooms: A research-based perspective*. Alexandria, VA: Association for Supervision and Curriculum Development. This review of research emphasizes effective school characteristics, but also includes effective classroom characteristics and teacher behaviors.

For teacher effects specifically:

Brophy (1979), op. cit.

Emmer, E. T., & Evertson, C. M. (1981). Synthesis of research on classroom management. *Educational Leadership, 38* (4), 342-347. This is a good, brief summary of major findings about classroom management.

Medley, D. M. (1977). *Teacher competence and teacher effectiveness. A review of process-product research.* Washington, DC: American Association of Colleges for Teacher Education. (ERIC Document Reproduction Service No. ED 143 629.) This report analyzes and synthesizes the results of nearly 300 studies on teacher competence and teacher effectiveness. Over 600 process-product relationships are displayed in a series of tables and then synthesized into a series of statements about effective teaching. The profile of effective teaching which emerges from this analysis includes: (1) the use of direct, interactive instructional techniques; (2) provision of correction and feedback; (3) use of validated classroom management methods; (4) frequent use of questioning strategies; and (5) use of whole-class activities. Variations on these methods for students of different abilities and different grade levels are discussed.

Rosenshine, B. (1976). Recent research on teaching behaviors and student achievement. *Journal of Teacher Education, 27* (1), 61-64. Twelve studies concerned with the relationship between classroom instruction and student achievement were reviewed. The major conclusion drawn from the findings of these studies is that achievement is enhanced by the use of direct instruction, defined as an approach in which "a great deal of time is spent on academic activities, with a predominance of seatwork using structured materials. Teacher and workbook questions are narrow and direct, usually with a single correct answer. Teachers and materials provide immediate feedback using praise and acknowledgment of student answers. Students work in groups supervised by the teacher, with little free time or unsupervised activity" (pp. 63-64). The studies of primary level low-SES children revealed that this instructional approach is especially important in promoting their achievement and affective development.

Rosenshine, B. (1983). Teaching functions in instructional programs. *Elementary School Journal, 83* (4), 335-351. Research on effective teaching practices is cited, with a special focus on the common ingredients found in successful inservice training programs—programs whose teacher participants have had academically successful students. The bulk of the article is devoted to a detailed discussion of the six instructional functions identified across these programs: (1) review, checking previous day's work; (2) presenting new content/skills; (3) initial student practice; (4) feedback and correctives; (5) student independent practice; and (6) weekly and monthly reviews. Within each section findings from effective teaching research are presented, along with discussion of the component parts of and alternative methods for carrying out each function. This is a valuable resource!

13. Brookover, W. B., Schweitzer, J. H., Schneider, J. M., Beady, C. H., Flood, P. K., Wisenbaker, J. M. (1978). Elementary school social climate and school achievement. *American Educational Research Journal. 15* (2), 301-318. In a study of 91 randomly selected elementary schools, school climate was found to explain as much of the achievement in the schools as did socioeconomic status or percent of white students. This research suggests that schools can and do make a difference in achievement beyond what the student's family background contributes.

Wisenbaker, J. (1979). *School social systems and student achievement: schools can make a difference.* New York: Praeger. This was an analysis of two pairs of public elementary schools. One pair was matched with the other pair on racial composition, socioeconomic status and urban location. A high- and low-achieving school were in each pair.

Purkey & Smith. (1983), op cit.

Rutter, et al. (1979), op cit. This work uses the term ethos, rather than climate.

14. Anderson, C. S. (1982). The search for school climate: A review of the research. *Review of Educational Research, 52* (3), 368-420. This is a theoretical and technical summary of the history of school climate, definitions of school climate, measurement of climate, and

methodological issues in the research. It is a good source of references on school climate instruments and related research studies.

Anderson, L. M., Evertson, C.M., and Brophy, J. E. (1979). An experimental study of effective teaching in first grade reading groups. *Elementary School Journal, 79*, 193-223. This research deals with climate and classroom management and instructional techniques. Although we have placed positive climate in the Organization/Administrative set of attributes, some might argue that it or a part of it belongs in the Instructional Processes set.

Brophy & Evertson (1979), op cit.

Good, T. L. & Grouws, D. A. (1979). The Missouri Mathematics Effectiveness Project: An experimental study in fourth-grade classrooms. *Journal of Educational Psychology, 71* (3), 355-362. This study also deals with classroom management and teaching effectiveness in addition to positive climate. It is one of the few studies that demonstrates a *causal* relationship between effective teaching and achievement. A group of teachers trained in effective practices was compared to a control group of teachers. Student achievement was better with the trained teachers than the controls. The study also suggests that teachers can learn and apply the research findings successfully.

15. Rutter, et al. (1979), op. cit.

16. Brookover & Lezotte (1979), op. cit.

Edmonds (1979), op. cit.

17. Doherty, V. W., & Peters, L. B. (1981). Goals and objectives in educational planning and evaluation. *Educational Leadership, 38* (8), 606-611. Two central office staff discuss the importance of clarity of goals to describe outcomes for goal-based planning.

Leithwood, K. A., & Montgomery, D. J. (1982). The role of the elementary school principal in program improvement. *Review of Educational Research, 52* (3), 309-339. Three categories of research on elementary school principals were reviewed (29 studies) by the authors—research concerned with the principal's role in general, that concerned with school-level innovation and change, and that concerned with the principal's role as one ingredient of overall school effectiveness. They found that "effective" principals were *proactive* with respect to instruction and student well-being. "Typical" principals tended to be *responsive* to district demands and to the day-to-day problems encountered.

Niedermeyer, F., & Yelon, S. (1981). Los Angeles aligns instruction with essential skills. *Educational Leadership, 38* (8), 618-620. These authors found that when instruction and assessment are focused on stated objectives the effects of schooling are understandable.

Venezky, R. L., & Winfield, L. F. (1979). *Schools that succeed beyond expectations in teaching.* (Tech. Rep. No. 1.) Newark, DE: University of Delaware Studies on Education. (ERIC Document Reproduction Service No. ED 177 484.) This is a report of an in-depth case study of two schools where various ethnographic techniques were used.

18. Stickney, B. D. & Plunkett, V. R. L. (1982). Has Title I done its job? *Educational Leadership, 39* (5), 378-383. This is a brief review of Title I effectiveness and those principal requirements that the authors (based upon their review of research) find to be educationally sound. They are: supplement, not supplant, and provide increased learning time, use evaluation, coordinate Title I activities with school activities, and promote parent involvement.

19. Carter, L. F. (1984). The sustaining effects study of compensatory and elementary education. *Educational Researcher, 13* (7), 4-13. Major findings emerging from the Sustaining Effects

Study, "the largest study ever undertaken of elementary education," (p4) are reported by that study's project director. Data were collected on as many as 120,000 students in a representative sample of over 300 elementary schools for three school years, and these data are analyzed in a series of 21 technical reports on which the present article is based. Many of the findings reported are in the form of comparisons between compensatory education students and other students, and between higher- and lower-achieving schools. Many of the findings regarding achievement have to do with "opportunity to learn;" that is, factors which can affect achievement because of their influence on the amount of time during which students have the opportunity to learn and are attempting to learn. A wealth of information is provided concerning student home environment, the effects of background on school achievement, the characteristics of compensatory education recipients, and the effects of Title I program participation on different categories of students.

20. Leithwood & Montgomery (1982), op. cit.

    Venezky & Winfield (1979), op. cit.

21. Freeman, D. J., Kuhs, T. M., Porter, A. C., Floden, R. E., Schmidt, W. H., & Schwille, J. R. (1983). Do textbooks define a national curriculum in elementary school mathematics? *The Elementary School Journal, 83* (5), 501-513. This research suggests that the proportion of topics presented on a standardized test that were substantively addressed in the textbooks studied was never higher than 50 percent. Authors conclude that no single test is equally well suited for all texts and vice versa.

    Niedermeyer, F. & Yelon, S. (1981), op. cit.

22. Fullan, M. (1982). *The meaning of educational change*. Toronto, Ontario, Canada: Ontario Institute for Studies in Education. This book is a comprehensive analysis of studies of educational change. Evidence is provided as to why educational reforms fail or succeed. The emphasis is on improvement of schooling at all levels—from national to classroom.

    Hawley, et al. (1984), op. cit.

    Paddock, S. C. (1979). *The myth of parent involvement through advisory councils*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco. This study reports the result of several case studies demonstrating that the principals essentially established the issues and made the decisions for parent advisory councils.

    Sinclair, R. L. (Ed.) (1981). *A two-way street: Home-school cooperation in curriculum decisionmaking*. Boston, MA: Institute for Responsive Education. Essays, reviews and guidelines concerning parent and community participation in the education of elementary school children are presented in this collection. A review of several recent studies of parent involvement-student outcomes relationships is provided. The research suggests that: (1) achievement is not enhanced when parents serve as school employees or decision makers; (2) the role of parents as tutors in reading and mathematics does contribute to improvements in achievement; and (3) achievement gains noted as a result of parent participation in instruction are accompanied by improvements in student self-concept.

23. Brookover, et al. (1979), op. cit.

    Edmonds (1979), op. cit. Parent-*initiated* involvement seems to be the key.

24. Armor, D., Conry-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1976). *Analysis of the school preferred reading program in selected Los Angeles minority schools*. Santa Monica, CA: Rand Corporation. (ERIC Document Reproduction

Service No. ED 130 243). Twenty Los Angeles elementary schools with a high proportion of poor minority students were studied. All the schools had implemented a reading improvement program, with varying effects on student achievement. School and classroom characteristics were examined in relation to these data, in an attempt to identify the factors responsible for program success or lack of success. The characteristics found to be associated with reading achievement gains included: (1) the teachers' belief in their ability to teach and students' ability to learn; (2) structured, orderly classrooms; (3) high levels of contact between parents and school staff; (4) ongoing staff development and teacher collaboration/planning; (5) principals who achieve a balance between strong leadership and teacher autonomy; and (6) teacher flexibility in modifying and adapting instructional approaches.

Indelicato, G. T. (1980). Community involvement and academic achievement: A positive combination. *Community Education Journal, 7* (4), 6-8. Parent/community involvement research is reviewed. The reviewer cites and describes studies which have revealed positive relationships between elementary level student achievement and parent/community participation in policy making, decisionmaking and instruction. Parent and community involvement was found to be positively related to student achievement and students' expectations for their futures. Students whose parents tutored them experienced increases in achievement and learning motivation and the parents themselves were found to experience improvements in their self-images. Suggestions are offered for increasing the level of parent involvement in the schools.

25. Sinclair (1981), op. cit.

Weibly, G. W. (1979). *Parental involvement programs: Research and practice.* Paper presented at the Annual Meeting of the American Educational Research Association. (ERIC Document Reproduction Service No. ED 204 073). This paper examines research findings concerning the effects of parental involvement on the intellectual development and academic achievement of preschool and elementary school children, particularly those from low-SES backgrounds. Studies with preschoolers revealed that parent involvement is beneficial and that results persist over time. Research with elementary level children demonstrated that parent involvement, especially when parents receive training in how to promote their children's learning, enhances student achievement, particularly for the low SES or ethnic minority student. Various difficulties encountered in establishing and maintaining parent involvement programs are cited.

26. Brandt, R. S. (Ed.). (1979). *Partners: parents and schools.* Alexandria, VA: Association for Supervision and Curriculum Development. (ERIC Document Reproduction Service No. ED 177 700.) This is a booklet that gives an historical perspective of parent involvement, has several articles on effective parent involvement in Title I, and offers some suggestions for encouraging more parental involvement.

Walberg, H. J. (1984). Families as partners in educational productivity. *Phi Delta Kappan, 65* (6), 397-400. This article provides a succinct description of the role of families in education. It emphasizes non-cultural differences, homework, the home environment, and home/school partnerships.

27. Purkey & Smith (1983), op. cit.

Wargo, M. J. (1977). *Those elusive components that contribute to the success of compensatory education projects.* Paper presented at the Annual Meeting of the American Educational Research Association, New York. (ERIC Document Reproduction Service No. ED 141 444.) This study traces the history of a series of early studies designed to identify and document unusually successful compensatory education projects. Six components emerged which mirror the effective schooling practices attributes. They were: (1) clearly stated academic objectives, (2) teacher training, (3) small group or individualized

instruction, (4) directly relevant instruction, (5) high treatment intensity, and (6) active parental involvement.

28. Leithwood & Montgomery (1982), op. cit.

29. Fullan (1982), op. cit.

30. Armor, et al. (1976), op. cit.

California State Department of Education. (1980). *Report on the special studies of selected ECE schools with increasing and decreasing reading* scores. Sacramento, CA: Office of Program Evaluation and Research. (ERIC Document Reproduction Service No. ED 188 106.) The characteristics of eight early childhood education schools in which third grade reading scores were improving were compared with those of eight similar schools in which such scores were declining. Compared to the declining achievement schools, the increasing achievement schools were characterized by: (1) a general sense of educational purpose, which included clarity about goals, commitment to them, and a sense of competence to achieve them; (2) strong leadership of the principal and teachers in coordinator roles, which included shared responsibility for planning, implementation and decision making; (3) high expectations for student learning; (4) teacher accountability for student performance; (5) ongoing inservice training that related to the instructional program; and, (6) a reading curriculum that included activities leading to mastery of complex reading skills, together with integration of reading improvement activities into other subject areas. Researchers emphasize that these features were implemented in different ways within each successful school.

31. Good & Grouws (1979), op. cit.

Stallings, J. (1980). Allocated academic learning time revisited, or beyond time on task. *Educational Researcher, 9* (11), 11-16. The research on instructional time is reviewed in this article, followed by a report on a two-phase study conducted by the author and her colleagues. In the review, research on three instructional time measures (allocated time, engaged time, or time-on-task, and academic learning time) is summarized. The first phase of the study looked at the reading achievement outcomes of off-task behavior and of both interactive and noninteractive on-task behavior. In the second phase, teachers were provided inservice training based on findings from the first phase. Among the findings reported were that interactive on-task behavior produced the greatest gains, especially among academically needy students, and that training increased teachers' use of behaviors associated with productive use of time.

Both these experimental studies demonstrate that teachers can, with reasonable feedback, learn effective teaching methods that result in increased student achievement.

O'Neal, S. (1984). Staff development strategy for improving teacher practice. *R & DCTE Review, 2* (3), 3-5. This summarizes features of the Changing Teacher Practice study which provides further recommendations for staff development. Teachers should have opportunities to discuss professional issues. Technical assistance is important as teachers try out new methods. Strategies should be flexible enough to fit classroom or school regularities. Teachers should be able to reflect upon the effects of their behavior so that they can adjust or maintain the behavior.

32. Hawley, et al. (1984), op. cit.

O'Neal, S. (1984), op. cit.

33. Cooley, W. W. & Lohnes, P. R. (1976). *Evaluation research in education: Theory, principle and practice*. New York: Irvington. The quote comes from page 11 in Chapter 1 which defines and discusses evaluation with particular reference to John Dewey's empirical approach to assess values. They go on to quote Dewey on page 13: "Evaluation is that type of deliberation which 'has its beginning in troubled activity and its conclusion in choice of a course of action which straightens it out.' " This monograph takes the reader through the philosophy and theory of instruction, to technical issues of the appropriate measures, to statistical methodology and to examples of evaluations and their policy implications.

34. Clark, T. A., & McCarthy, D. P. (1983). School improvement in New York City: The evolution of a project. *Educational Researcher*, 12 (4), 17-24. This article describes the development and implementation of a school improvement project. The characteristics and phases of the improvement effort are discussed in some detail, because of extensive process documentation. This exemplifies the role of evaluation results in school improvement.

35. Fullan (1982), op. cit., pp. 176-177.

36. Fullan (1982), op. cit., pp. 235-236.

37. David, J. L. (1981). Local uses of Title I evaluations. *Educational Evaluation and Policy Analysis, 3* (1), 27-39. This study found that in Title I there seemed to be preferences for other than standardized achievement measures. These measures are used to confirm beliefs about program effectiveness, but are discounted if the results are incompatible with beliefs. Furthermore, the data required for federal reports do not get at important goals identified by teachers such as self-concept, attendance, and student attitude. Evaluation is often equated with accountability, which conveys a negative connotation. This distrust, coupled with the difficulty of timing the evaluation with program planning for the next year, translates into little program improvement based upon the evaluation data.

38. Armor, et al. (1976), op. cit.

Brookover & Lezotte (1979), op. cit.

Edmonds (1979), op. cit.

Edmonds (1977), op. cit.

Leithwood & Montgomery (1982), op. cit.

Madden, J. V., Lawson, D. R., & Sweet, D. (1976). *School effectiveness study*. Unpublished manuscript. Sacramento, CA: California State Department of Education. High- and low-achieving schools (21 of each) were studied in order to identify those characteristics which were related to the achievement differences noted. Schools were paired on the basis of pupil characteristics to reduce the likelihood that non-school factors would intrude into the analysis. Researchers found that, compared with the teachers at lower-achieving schools, teachers at the higher-achieving schools: (1) reported greater support from and more leadership exercised by the principal; (2) utilized more of the instructional techniques validated by research; (3) displayed more of the classroom management techniques validated by research; (4) had access to more instructional resources; (5) reported receiving better support services from the district office; (6) conducted more whole class instruction; and (7) were more committed to and happier in their jobs.

Purkey & Smith (1983), op. cit.

Venezky & Winfield (1979), op. cit.

Weber (1971), op. cit.

39. Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. *Educational Administration Quarterly, 18* (3), 34-64. This is a research review of characteristics of effective principals. They argue that the research is vulnerable to the claim that the direction of causality between effective principal and effective school cannot be determined from the present research.

40. Hawley, et al. (1984), op. cit., p. 54.

41. Squires, et al. (1984), op. cit., see pp. 57 and Chapter 5 where the relationship between student achievement, positive school climate and school leadership is discussed.

42. California State Department of Education (1980), op. cit.

Edmonds (1977), op. cit.

Leithwood & Montgomery (1982), op. cit.

Rutter, et al. (1979), op. cit.

Venezky & Winfield (1979), op. cit.

43. Leithwood & Montgomery (1982), op. cit.

Berman, P., & McLaughlin, M. W. (1977). *Federal programs supporting educational change, Vol VII: Factors affecting implementation and continuation.* Santa Monica, CA: Rand Corp. This is one of eight volumes of a federally funded study to analyze the effects of "seed money" on local change processes. Once an innovation was successful, several factors were evaluated that led to continuation after federal dollars were no longer available. They found that "the leadership of the project director and the school principal had a major influence on project implementation and eventual continuation" (p. 188). The principal was the key, running interference, lending support, and creating a climate of acceptance of the project. Parental involvement is discussed in Appendix C.

Venezky & Winfield (1979), op. cit.

44. Leithwood & Montgomery (1982), op. cit.

Rutter, et al. (1979), op. cit.

45. Armor et al. (1976), op. cit.

Levine, D. & Stark, J. (1982). *Extended summary and conclusions: Instructional and organizational arrangements and processes for improving academic achievement at inner city elementary schools.* Kansas City: University of Missouri. (ERIC Document Reproduction Service No. ED 213 814.)

See also Levine, D. & Stark, J. (1982). Instructional and organizational arrangements that improve achievement in inner-city schools. *Educational Leadership, 40* (3), 41-46, for an overview of the evaluation discussed in the ERIC document.

46. Hawley, et al. (1984), op. cit.

Leithwood & Montgomery (1982), op. cit.

Venezky & Winfield (1979), op. cit.

47. Brookover & Lezotte (1979), op. cit.

Hawley, et al. (1984), op. cit.

Venezky & Winfield (1979), op. cit.

48. Doyle, W. (1983). Academic work. *Review of Educational Research, 53* (2). 159-199. This is a review of recent research in cognitive phychology on the intellectual demands of the tasks contained in the school curriculum and how academic work is accomplished in classroom environments. Direct instruction means that academic tasks are carefully structured, students are given explicit instruction on how to accomplish the task and then are guided through practice to achieve mastery.

Fisher, C. W., Berliner, D. C., Filby, N. N., Markive, R., Cohen, L. S., & Dishaw, M. M. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), *Time to learn*. Washington, DC: U.S. Department of Education. This chapter is a summary of the essential findings of the now classic Beginning Teacher Evaluation Study which prompted inquiry into teaching and learning in the elementary school. This study was the source of the variable, academic learning time (ALT).

Good, T. L., & Hinkel, G. M. (1982). Schooling in America: Some descriptive and explanatory statements. Washington, DC: National Commission on Excellence in Education. (ERIC Document Reproduction Service No. 228 246.) This invited paper nicely summarizes what is known about the relationship between teacher behavior and student behavior. It provides a good reference list.

49. Good & Hinkel (1983), op. cit.

Medley (1977), op. cit.

Rosenshine, B. (1983), op cit.

50. Brophy (1979), op. cit.

Good & Grouws (1977), op. cit.

Rosenshine, ibid.

51. Brophy, ibid.

Fisher, et al. (1980), op. cit.

Rosenshine, ibid.

Stallings (1980), op. cit.

52. Fisher, et al., ibid.

Good & Grouws (1977), op. cit.

Rosenshine, ibid.

53. Brophy, J. E., & Evertson, C. H. (1976), op. cit.

Stallings (1980), op. cit.

54. Good & Grouws (1977), op. cit.

Rosenshine, ibid.

55. Rosenshine, ibid. The author suggests three other ways in which practice can take place. He cites Everston, who found that teacher-led practice had "very brief seatwork activities. Instead, material was presented through short presentations, followed by long periods of questioning where all students were expected to participate" (p. 347). Another approach used checklists of tasks relevant to the skills in question. The students time themselves and check each others' work. Building on the student interaction strategy is the cooperative learning strategy. Here students collaborate on a common product or prepare for a cooperative activity. See pp. 347-348 for more detail and references.

Periodic review is the last piece in the structured lesson before recycling occurs. This permits additional checking for understanding, reteaching if necessary, and a way to check on the pace of the teaching.

56. Kulik, C. C., & Kulik, J. A. (1982). Effects of ability grouping on secondary school students: A meta-analysis of evaluation findings. *American Educational Research Journal, 19* (3), 415-428. This article reports the results of a meta-analysis of findings from 52 studies of ability grouping carried out in secondary schools. Meta-analysis is an analysis of several analyses using a common statistical unit to generalize about results across several studies.

57. Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). *Becoming a nation of readers: The report of the Commission on Reading*. Washington, DC: National Institute of Education. This is a well written, non-technical review of research on the process of reading, the impact of various settings on reading experiences, and classroom practices that affect children's experience with written language. It contains a wealth of information for a parent who wants to understand reading processes and how the home environment affects the child to a teacher who is interested in alternatives to ability grouping or standardized test use.

58. Glass, G. V., & Smith, M. L. (1977). "Pull out" in compensatory education. Paper prepared for the U.S. Office of Education. Boulder: University of Colorado. (ERIC Document Reproduction Service No. ED 160 723.) This paper was commissioned by the U.S. Office of Education to consider the educational benefits of pull-out. The conclusions were that pull-out was universal in 1977. The procedure has no clear benefits and may be detrimental to a student's progress and adjustment. The procedure is more of a compliance technique to ensure that instruction is supplemental.

Cooley, W. W., & Leinhardt, G. (1980). The instructional dimensions study. *Educational Evaluation and Policy Analysis, 2* (1), 7-25. This was a large study designed to evaluate classroom instruction in a continuum for individualized to group sharing of curriculum characteristics. It sampled 400 classrooms and direct measures of classroom processes were collected. They found only low levels of individualization based upon the percentage of assignments within a class that were devised for a particular student. They concluded that pull-out did not seem to enhance achievement and when pull-out is used, direct instruction procedures were most effective.

59 Leinhardt, G., & Pallay, A. (1982). Restrictive educational settings: Exile or haven? *Review of Educational Research, 52* (4), 557-578. This is a review of research on academic and affective impact of isolating students into homogeneous groups for instruction. They conclude that it is not the setting, but the nature of the instruction that determines outcomes. Ethically it may be inappropriate to isolate the students.

60. Hawley, et al. (1984), op. cit., pp. 30-32.

61. Harnischfeger, A. (1980). Curricular control and learning time: District policy, teacher strategy, and pupil choices. *Educational Evaluation and Policy Analysis, 2* (6), 19-30. Discusses several topics related to school improvement: course offerings, class size and grouping, pull-out, homework and school schedules. The theme is learning time and how to increase it.

62. Levine, D. U., & Stark, J. (1981), op. cit.

63. Hawley, et al. (1984), op. cit.

64. Bloom, B. S. (1976). *Human characteristics and school learning*. New York: McGraw-Hill. This book summarizes the model of mastery learning and Bloom's thesis of individual differences. He argues and provides evidence that by using a mastery approach as many as 95% of all students will achieve mastery.

65. Walberg, H. J. (1982). What makes schooling effective? A synthesis and a critique of three national studies. *Contemporary Education Review, 1* (1), 23-34. It is helpful in understanding the scope and emphasis of educational research because the percentage of studies with positive findings are presented.

66. Hawley, et al. (1984), op. cit.

67. Hawley, et al., ibid.

68. Wargo (1977), op. cit.

69. Cooley & Leinhardt (1980), op. cit.

70. Hawley, et al., op. cit.

71. Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher, 13* (6), 4-... This paper presents work on alterable instructional variables such as reinforcement, corrective feedback, time-on-task, homework, etc., that, if used in combination, would be as effective as one-to-one tutoring.

Cohen, P. A., Kulik, J. A. & Kulik, C. C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal, 19* (2), 237-248. This is a secondary analysis (i.e., an analysis of analyses) of 65 independent evaluations of school tutoring programs. The findings demonstrate that tutored students out-performed untutored students on examinations and measures of positive attitudes toward the subject matter being tutored.

See also Hawley et al. (1984), pp. 34-38 for further discussion of tutoring and the related cooperative team learning concept of Slavin and Johnson & Johnson.

72. Berliner, D. C. (1979). Tempus educare. In P. L. Peterson & H. J. Walberg (Eds.), *Research on teaching: Concepts, findings and implications* (pp. 120-135). Berkeley, CA: McCutchan Publishing Corp. This is a concise summary of the essential findings from the Beginning Teacher Evaluation Study of which the author was part. He deals with the three components of academic learning time and the data collected on time utilization in second and fifth grade classes.

See also Fisher, et al. (1980), op. cit.

The theoretical roots of instructional time are found in the works of the following:

Carroll, J. B. (1963). A model of school learning. *Teachers College Record, 64*, 723-733.

Bloom (1976), op. cit.

Harnischfeger, A. & Wiley, D. E. (1976). Teacher-learning processes in elementary school: A synoptic view. *Curriculum Inquiry*, 6, 5-43.

73. The relationship of ALT and achievement undoubtedly reaches a peak and then falls off, i.e., it is not a linear relationship. A low error rate of about 20 percent or fewer errors is noted as an appropriate level of difficulty. Keeping students on task for too long at something that is too difficult will not improve achievement.

74. Anderson, et al. (1985), op. cit.

75. Berliner (1979), op. cit.

76. Fisher et al. (1980), op. cit.

Hawley (1984), op. cit.

Stallings (1980), op. cit.

Walberg (1982), op. cit.

77. Brophy (1979), op. cit.

Emmer, E. T., Evertson, C. M., & Anderson, L. M. (1980). Effective classroom management at the beginning of the school year. *Elementary School Journal*, *80* (5), 219-231. Twenty-seven third grade teachers and their students in eight low-SES, multi-ethnic elementary schools participated in this study. Data were gathered through observations and interviews on teachers' classroom management behavior, students' on- or off-task behavior, and teachers' planning methods. Comparisons with students' reading achievement data were made to determine relationships among teacher behaviors, student behaviors and student achievement. Many findings were reported, leading to the general conclusion that an efficient system for organizing and clearly communicating procedures, rules and initial activities at the beginning of the school year is positively related to student on-task behavior and achievement. The need for this system to be augmented by ongoing monitoring, responsiveness to student concerns, and use of basic communication skills is also highlighted.

Hawley, et al. (1984), pp. 21-24, provide additional suggestions for optimizing academic learning time.

78. Harnischfeger (1980), op. cit.

79. Keith, T. Z. (1982). Time spent on homework and high school grades: a large-sample path analysis. *Journal of Educational Psychology*, *74* (2), 248-253. This study was based upon the data from The High School and Beyond Study. The 20,364 seniors had their race, family background, SES, aptitude and major taken into account.

80. Austin, J. D. (1979). Homework research in mathematics. *School Science and Mathematics*, *79*, 115-121. This is a summary of the research on the effects of homework on mathematics achievement through 1977. Other conclusions were: long homework assignments are not clearly better than shorter assignments, no homework assignment in a grade can adversely affect performance in subsequent grades.

81. Armor, et al. (1976), op. cit.

Brookover & Lezotte (1979), op. cit.

Brookover, et al. (1979), op. cit.

Edmonds (1979), op. cit.

Leithwood & Montgomery (1982), op. cit.

Purkey & Smith (1983), op. cit.

Rutter, et al. (1979), op. cit.

82. Brophy, J. E. (1979) Teacher behavior and its effects. *Journal of Educational Psychology, 71,* 733-750. Another good review of teaching effectiveness.

Good, T. L. & Brophy, J. E. (1978). *Looking in classrooms* (2nd Ed.) New York: Harper and Row. This book discusses what goes on in classrooms with emphasis on teacher behavior. It provides a research base with references. Most importantly, specific ways that classroom management characteristics can be implemented are presented. Many useful instruments are suggested for this purpose and the authors provide explicit discussion of how to use them.

The reader is also reminded of several, now classic books demonstrating that: (1) teachers are so completely absorbed in their classroom instruction and management that they have difficulty explaining what they do or what they plan to do (Jackson, P. [1968] *Life in classrooms*. New York: Holt, Rinehart and Winston); and (2) teachers' behavior will change when they become aware of what they were really doing (Holt, J. [1964]. *How children fail*. New York: Pitman; Kohl, H. [1967]. *36 children*. New York: New American Library).

83. Good & Brophy (1978), op. cit., pp. 65-70.

84. Ibid, p. 70.

85. Brophy (1979), op. cit.

86. Good & Brophy (1978), op. cit. Closely monitoring student progress is essential for maintaining *appropriate* expectations—another reminder of the interrelationship between attributes.

Teachers who are generally most successful with students of low ability/low socioeconomic status move through the instructional material at a slower pace, allowing more time for practice. They still move at a good pace relative to less successful teachers of similar groups of students. (Brophy [1979], op. cit.; Brophy & Evertson [1976], op. cit.)

87. Brophy, J. E. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51* (1), 5-32. The author reviews classroom process research on teachers' verbal praise and finds that it cannot be equated with reinforcement. Often praise is not even intended for reinforcement (i.e., contingent, specific, and credible). Much teacher praise is determined more by the teacher's perceptions of student needs than by the quality of student conduct or performance.

88. Brophy & Evertson (1976), Good & Brophy (1978) and Brophy (1979) defend the use of praise by teachers, but in a more recent synthesis of research, Brophy (1981) raises some doubts, particularly when praise is equated with reinforcement.

89. Griswold, P. A., & Arnold, M. R. (1980). Rate and accuracy of vowel recognition as a function of spoken reinforcers and age. *Journal of School Psychology, 18* (3), 256-262. The study of urban, low SES males in grades 1-3, 6-7, and 11-12 demonstrated that the effectiveness of praise decreases with grade level and effectiveness of corrective reinforcers increases with grade level. The study distinguished between two types of praise and showed that there are developmental differences in their effectiveness.

90. Beyond the age of 9 or 10, children generally want to please adults less and please their peers more. Teacher praise, for example, conveys to a younger child (less than 9 or 10 years of age) that the teacher is pleased. To an older child, pleasing the teacher is not as important. In fact, praise may be embarrassing to older children and this is apt to work against positive reinforcement of behavior. Furthermore, Brophy reports a study by Ware (1978) in which high school students ranked praise 10th out of 15 reinforcements that were surveyed. Their teachers ranked praise even lower!

91. Brophy & Evertson (1976), op. cit.

92. Rutter, et al. (1979), op. cit. Formal prizes were not found to be beneficial to achievement or behavior. The authors suggest three possible explanations: (1) only a minority of students receive them, thus discouraging the majority; (2) delay in receiving them may tend to diminish their impact; and (3) they may replace intrinsic motivation with extrinsic motivation.

93. Brophy & Evertson (1976), op. cit.

Good & Brophy (1978), op. cit.

94. Fullan, M. (1985). Change processes and strategies at the local level. *The Elementary School Journal, 85* (3), 391-421. This is a review of specific research relevant to understanding the process of change. The author discusses the limitations to strategies of improvement. He draws several cogent parallels between effective school improvement and change in business from the Peters & Waterman book *In Search of Excellence*. He concludes with 10 steps to a schoolwide strategy for improvement.

95. For "complexity" see: Fullan (1982), op. cit.; Greenwood, P. W., Mann, D., & McLaughlin, M. W. (1975). *Federal programs supporting educational change*, vol. III: *The process of change*. Santa Monica, CA: Rand Corporation. This is part of a large detailed study of federally funded programs designed to introduce and spread innovative practices in public schools. This volume summarizes the results of 29 case studies of change agent projects and describes the role of SEAs in choosing and disseminating change agent projects.

For "process not an event" see: Fullan (1982, 1985), op. cit.; Hall, G. E., & Loucks, S. F. (1977). A developmental model for determining whether the treatment is actually implemented. *American Educational Research Journal, 14* (3), 263-276. The research study puts forth the concept of Levels of Use of an Innovation as a means of determining the extent to which the innovation was implemented.

For the "personal" see: Fullan (1982), op. cit.; Hall, G. E., & Loucks, S. (1978). Teacher concerns as a basis for facilitating and personalizing staff development. *Teachers College Record, 80* (1), 36-53. Put forth is a conceptual structure called the Concerns-based Adoption Model which helps identify the concerns and anxieties of individuals as they engage in educational change.

96. McLaughlin, M.W. (1978). Implementation as mutual adaptation: Change in classroom organization. In D. Mann (Ed.), *Making change happen?* New York: Teachers College Press. This is a synthesis of some of the conclusions generated by the Rand Change-Agent Study. (See Greenwood et al. [1975], op. cit.)

97. Fullan (1985), op. cit. p. 396.

98. Fullan (1985), op. cit. pp. 417-418.

99. Ibid; organizations with limited opportunity for interaction are said to be "loosely coupled."

Purkey & Smith (1983), op. cit. They speculate on strategies for change on pp. 446-447.

100. Edmonds, R. (Speaker). (1981). *Teacher and school effectiveness*. (Video Recording). Alexandria, VA: Association for Supervision and Curriculum Development. This is a staff development film designed to introduce key research issues in school and teacher effectiveness.

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